

### Remarks

Claims 2-26 remain in the application. Claim 1 has been canceled. Claim 2 has been rewritten in independent form, and the claims that previously depended from claim 1 have been amended to depend from claim 2.

#### I. Independent claims

Each of independent claims 2, 12, 13, and 21 recites "a fiducial mark pattern comprising a plurality of dots surrounding [a] graphical bar code."

The Examiner has rejected claims 1-26 under 35 U.S.C. § 103(a) over Chang (U.S. 6,256,398). In particular, the Examiner has indicated that (emphasis added):

Re claims 1-5, 12-14 and 21-23, Chang discloses an apparatus and a method for encoding and decoding a message within an image comprising the steps of:

modulating a base image (col. 1, ll. 54-64) with a graphical encoding of a message to produce a graphical bar code (Figs. 8A and 8B); and

generating a fiducial mark pattern (Figs. 1-3B, rectangular pattern code 118 in Fig. 3A surrounds the graphical bar code 116 which includes a plurality of repeating pattern with a characteristic period, and see col. 5, lines 14-17) comprising a plurality of cells (sync cells 124 arranged to track one or more reference locations and local deformation across the graphical code (col. 5, ll. 6-14). Fig. 3A discloses the cells (BP1-BP9) of the fiducial mark pattern surround the graphical bar code (GP 116). The data cells and background cells are arranged in a predetermined fashion, e.g., regularly spaced position repeating from tile to tile. Furthermore, Chang teaches that both single color and/or multi-colored images can be produced to communicate embedded messages in images (col. 2, ll. 21-28). The particular orientation of pixels is directly related to decoding the message embedded and an error correcting method.

That is, the Examiner has asserted that, in Chang's disclosure, (1) the background pixels 118 surrounding a glyph pixel 116 in a cell of pixels correspond to the fiducial mark pattern recited in the claims, and that (2) the sync cells 124 correspond to the fiducial mark pattern recited in the claims. Contrary to the Examiner's assertions, however, Chang does not teach or suggest a fiducial mark pattern comprising a plurality of dots surrounding a graphical bar code, as recited in each of the pending claims.

Chang discloses a scheme for embedding a message in a visual image by dividing pixels of a visual image into sync cells 124 and data cells 126, and grouping the cells into tiles 122 each of which contains one sync cell 124 and multiple data cells 126. As shown in FIG. 1, the tiles 122 are arranged in a two-dimensional array to form the modified visual image containing the message embedded in the glyph pixels of the data cells. Thus, in Chang's approach, the sync cells 124 do not surround the modified visual image, which the Examiner has identified as a graphical bar code, but rather the sync cells 124 are interspersed throughout the modified visual image. Therefore, the sync cells 124 do not correspond to "a fiducial mark pattern comprising a plurality of dots *surrounding* [a] graphical bar code," as recited in each of the pending claims (emphasis added).

Furthermore, in Chang's disclosure, each cell (i.e., each sync cell 124 and data cell 126) includes a glyph pixel (GP) 116 surrounded by a set of background pixels (BP) 118. Contrary to the Examiner's assertion, the background pixels 118 do not form a "plurality of repeating pattern" (*sic*). Rather, the values of the background pixels correspond to the values of corresponding pixels in the original visual image to keep "low the distortion to the original visual image (foreground image), which determines the pixel values of the background pixels" (col. 5, lines 63-65). In addition, the background pixels shown in FIG. 3A surround only a single glyph pixel 116 of a cell, which in turn constitutes only a small fraction of the visual image containing the embedded message. Therefore, the background pixel "pattern" cited by the Examiner also does not correspond to "a fiducial mark pattern comprising a plurality of dots *surrounding* [a] graphical bar code," as recited in each of the pending claims (emphasis added).

For at least these reasons, the Examiner's rejection of independent claims 2, 12, 13, and 21 under 35 U.S.C. § 103(a) over Chang now should be withdrawn.

## II. Dependent claims

Claims 3-11, 22, and 23 incorporate the features of independent claim 2. Claims 24-26 incorporate the features of independent claim 12. Claims 14-20 incorporate the features of independent claim 13. Therefore, claims 3-11, 14-20, and 22-26 are patentable for at least the same reasons explained above.

## III. Conclusion

For the reasons explained above, all of the pending claims are now in condition for allowance and should be allowed.

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Respectfully submitted,

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